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BabyWatch User Manual

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Abstract

During an extended data-collection exercise in a busy Neonatal Intensive Care Unit, a research nurse (observer) was employed to collect data on neonatal state and care, which were not acquired automatically by the computerised monitoring system in the unit. The observer used a specially developed data acquisition tool called **BabyWatch** to enter these data. However, even though this software tool was designed for a specific project, it was developed as a stand-alone PC application that has more general use. This report provides instructions for the use of the BabyWatch software, and describes the structure of the input files and the output database tables.

Table of Contents

1. INTRODUCTION 1

2. INSTALLATION 1

3. MODIFICATION 1

3.1. INPUT FILES. 1
3.2. PROGRAM 1

4. 'COTS' SCREEN 2

5. 'DATA ENTRY' SCREEN 3

5.1. PATIENT 3
5.2. COMMENT 3
5.3. COTS 4
5.4. ACTIONS 4
5.5. BOWELS, CRYING, FEEDING, MOVEMENT, SIZE, SKIN, SLEEP 5
5.6. ALARMS 5
5.7. DRUGS 6
5.8. GASES 6
5.9. LAB 7
5.10. SETTINGS 7

6. STRUCTURE OF INPUT FILES 8

6.1. ACTIONS.TXT 8
6.2. BOWELS.TXT, CRYING.TXT, FEEDING.TXT, MOVEMENT.TXT, SKIN.TXT, SLEEP.TXT, SIZE.TXT . 8

7. DATABASE TABLES 8

7.1. OBSERVATIONS TABLE 8
7.2. COMMENTS TABLE 12
7.3. DAYS TABLE 12

1. Introduction

BabyWatch is an interactive system that allows an observer to enter in real time the actions performed on a neonate, the results of blood gas analyses and laboratory tests, medication administered, equipment settings and various physical observations. It is designed to run on a stand-alone PC (probably a laptop) at the cotside. It allows fast entry of data for one or more babies with a temporal accuracy of a few seconds.

2. Installation

Copy the following files to a suitable directory (say **C:\BabyWatch**):

BabyWatch.exe	the Windows executable
Database.mdb	an empty 'Access' format database
Actions.txt	a text file specifying the actions that can be recorded
Bowels.txt	ditto for bowel movements and urine production
Crying.txt	ditto for mood
Feeding.txt	ditto for feeding
Movement.txt	ditto for movement, muscle tone, etc.
Size.txt	ditto for size, shape and weight
Skin.txt	ditto for skin colour and appearance
Sleep.txt	ditto for patterns of sleep and wakefulness

When the program is run, it will create a Registry key
HKEY_CURRENT_USER\Software\BabyWatch

The program is designed specifically to use a screen resolution of 1024 x 768 pixels. It will not work at lower resolutions and the display will look odd at higher resolutions.

3. Modification

3.1. Input files.

It is possible to modify the actions and observations files but care is needed as the layout of information in the files is used to determine the layout of the input screens; see section 6.

3.2. Program

BabyWatch is programmed in Borland Delphi Version 6. If more significant changes are to be made (including different types of equipment), this will involve editing the source code and recompiling.

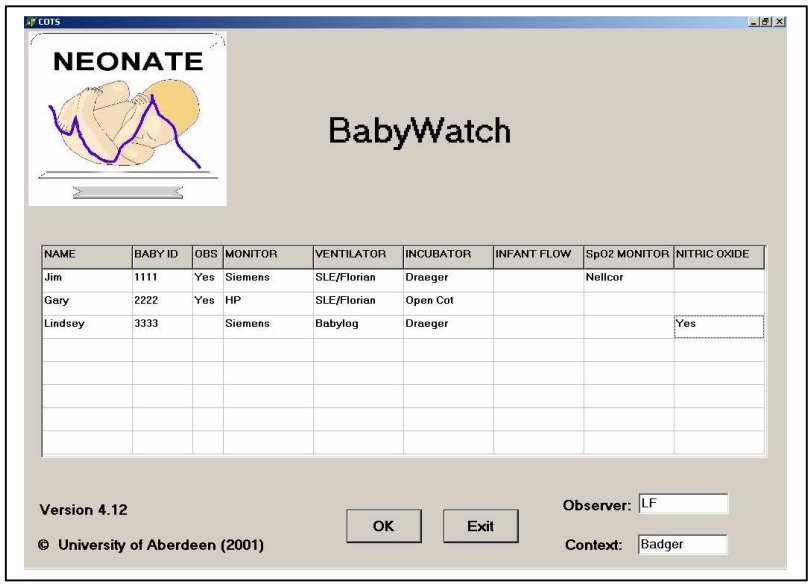
Copy the following files from \Source to a suitable directory (say **C:\BabyWatch\Source**):

BabyWatch.*	the project files
Actions.*	handles the entry of actions
Alarms.*	handles the entry of alarm limits
Cots.*	allows the user to identify one or more babies, and to say what equipment is in use for each
DataEntry*	provides the main control over data entry
Descriptors.*	handles the entry of all observations (bowels, crying, etc)
Drugs.*	handles the entry of all medication
FileAccessClass.pas	file handling utility
Gases.*	handles the entry of all blood gas results
Input.pas	provides the parent form type for several other forms
Lab.*	handles the entry of laboratory results
Settings.*	handles the entry of equipment settings
TSWQuery.pas	database query utility
Utilities.pas	general utilities

The executable will be placed in the main directory (i.e the parent directory to \Source).

4. 'Cots' Screen

On startup, the user is presented with the following screen:



Each row of the grid is used to record information on one baby and the cot in which it is located.

NAME: this is used to enter an easily recognised name for the baby so that the observer can identify the baby quickly and easily. It is not recorded in the database so anonymity is not compromised. Click in the cell before using the keyboard to enter the name.
BABY ID: this is used to enter the code which is used by the ward information system to identify the baby. Again, the ID is entered using the keyboard.
OBS: use the mouse to toggle the value in this cell between 'Yes' and blank. A blank cell means that the data has been set up for the baby (in advance) but the baby is not going to be observed. 'Yes' means that the baby is about to be observed.
MONITOR: use the mouse to toggle between the various values which have been set up for this. A blank means that the baby is not being monitored.
VENTILATOR: ditto for the ventilator.
INCUBATOR: ditto for the incubator.
INFANT FLOW: ditto for infant flow
SpO2 MONITOR: ditto for the SpO2 monitor
NITRIC OXIDE: ditto for nitric oxide.

There are two other pieces of information needed:

Observer: Use the keyboard to enter an identifier for the observer. The program will remember the previously entered value, so that in the case where there is only one observer, once this is entered for the first time, nothing need be done on subsequent executions.
Context: This means the name of the study or project to which this series of observations contributes. Again, the previous value is remembered, and this value will normally only have to be entered once at the start of the project.

OK: When the set-up is complete, click on the OK button to enter these values into the database. Notice that no entry is made until this button is clicked. When you stop observing a baby it is not enough to click in the **OBS** column - you will also need to click this button to

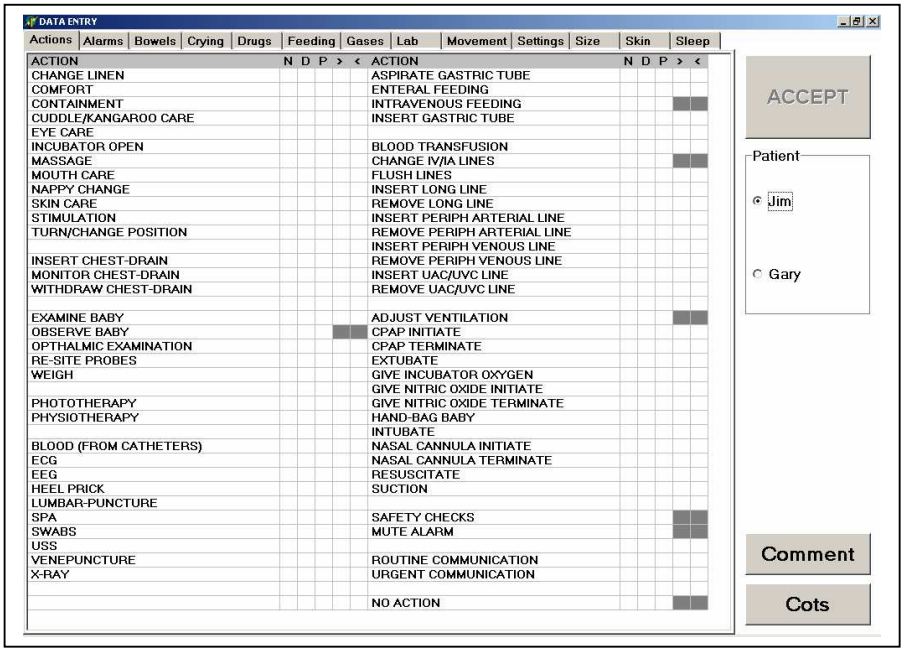
record the fact. Clicking also takes you to the data entry screen. If no baby is being observed then nothing will happen. All babies that are being observed must have a NAME and a BABY ID.

At any time during data entry, you can return to the Cots screen to change the data for a given baby. Most often this will be to change the observation status, but if the equipment is changed, this can be reflected here.

Exit: The Exit button provides the correct way to quit BabyWatch- you will be asked for confirmation.

5. 'Data Entry' Screen

Most of the DataEntry screen is occupied by a set of tabbed pages which allow rapid entry of the actions, observations, settings, etc. However before considering these, we will describe the other functions of this screen.



5.1. Patient

The Patient radio box on the right of the screen lists the babies that you have said are being observed. When the screen is first displayed and more than one baby is being observed, you will be asked to select one. If there is only one baby in the list, it will be selected automatically.

You can switch between babies at any time. The program will remember what you were doing when you were last working with any given baby, so it can restore the screen accordingly.

5.2. Comment

At any time you can enter a comment using the keyboard. The maximum number of characters is 250 and you will be warned if you go over that limit - you should then delete characters. You can use the **Clear** button to delete anything you have typed, and the **Cancel** button to stop entering a comment. When your comment is ready, click on **ACCEPT**. It will be time-stamped and entered into the database.

5.3. Cots

You can return to the Cots screen at any time by clicking the **Cots** button. You need to go to the Cots screen in order to exit from BabyWatch.

5.4. Actions

The Actions page is shown above.

The columns have the following meanings:

ACTION	The name of the action being carried out
N	The action is being carried out by a nurse
D	The action is being carried out by a doctor
P	The action is being carried out by a parent
>	Start of an action (see below)
<	End of an action (see below)

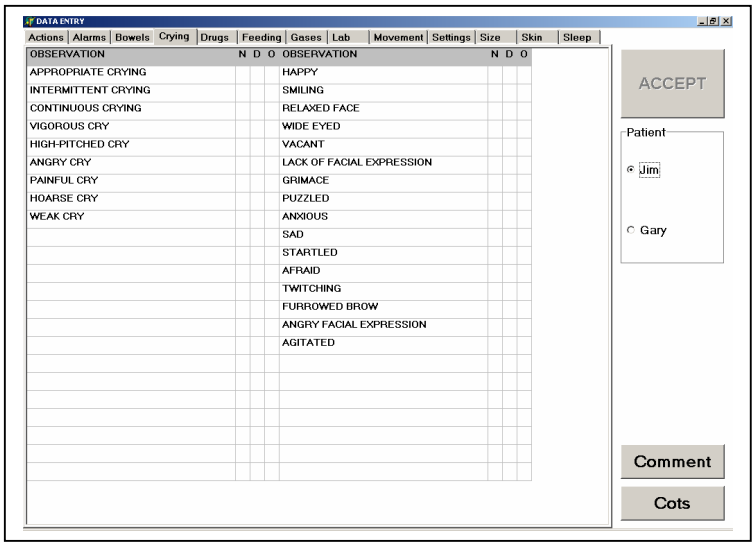
Record an action as follows.

- When a specific action is about to be performed, click on the box containing the name of the action. The box will change colour to dark blue. If you want to de-select the action, just click on it again.
- Then click in one of the columns labelled **N**, **D** or **P** to indicate who is going to carry out the action. Since most actions are carried out by nurses, the **N** box will already be coloured and if the nurse is the person concerned you need do nothing. However if this is not so, click one of the others. The system tries to cut down the amount of work you have to do, so the next time you select this action, it will remember who carried it out last and select that box automatically.
- Most actions take some time to perform. You therefore have to tell the system when the action starts and when it stops. Click in the **<** box to say that the action is about to start and in the **>** box if it is about to end. Most actions will be performed while you are observing, so when you click on the Action box, the **<** (start) box will be coloured and you need do nothing. If however you are indicating the end of an action which started before you started observing (e.g. a phototherapy session) then click in the **>** box to show this. The system remembers which box was chosen last time, and will pre-select the other the next time the action is selected. This means that for most actions you will not need to click in either of these boxes as the correct box will already be selected for you.
- Some actions are judged to have no measurable duration - they take place at a single point in time (e.g. Mute Alarm). In this case the **<** and **>** boxes are blanked out and are not used.
- When the action is completely specified, click on the **ACCEPT** button. If the action takes a finite time to carry out and you have just started it, then colour of the box will change to a pale blue to remind you that it will need to be ended at some point. When that time comes, click on the action again (its colour reverts to dark blue), check that the **>** box is selected and click on **ACCEPT**.
- Some actions have a number of 'attributes' which you can use to provide further information on what is going on. For example, the Examine Baby action allows you to specify what is being examined (ears, eyes, etc). These attributes appear as a list of check boxes on the right hand side of the screen. For actions which occur over an interval, the attributes will not appear until the action has started. Click on as many boxes as you need to before clicking on **ACCEPT**. For those actions which have no duration, the attributes will appear immediately, and should be checked before you click on **ACCEPT**.

Note that you can start and stop actions completely independently of any other actions that are taking place. So one action may start before another and finish afterwards.

5.5. Bowels, Crying, Feeding, Movement, Size, Skin, Sleep

These pages are all used in a similar way. By way of example the screen for Crying is shown below.

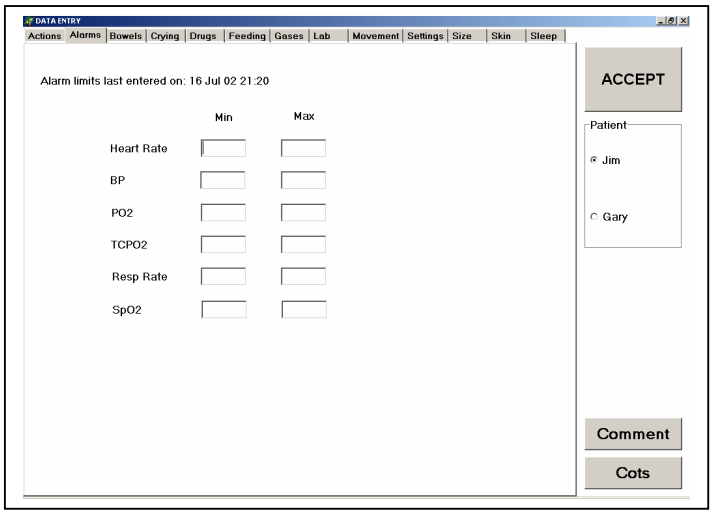


The columns have the following meanings:

OBSERVATION	The name of the observation being made
N	The nurse is providing the observation
D	The doctor is providing the observation
O	You (the Observer) are providing the observation

Select an observation by clicking on its name; the box will be coloured red. Click in the appropriate box in the **N**/**D**/**O** columns to select the person making the observation. You can select as many observations at once as you want. If you want to de-select an observation then just click on it again. When you are satisfied, click on **ACCEPT** and all the observations will be entered into the database.

5.6. Alarms



These are used at the start of an observational period to enter the **alarm limits** set on various items of equipment. Select a box by clicking in it and then type the value. If a particular measurement isn't being made or alarm limits are not set, just leave a blank. You can enter

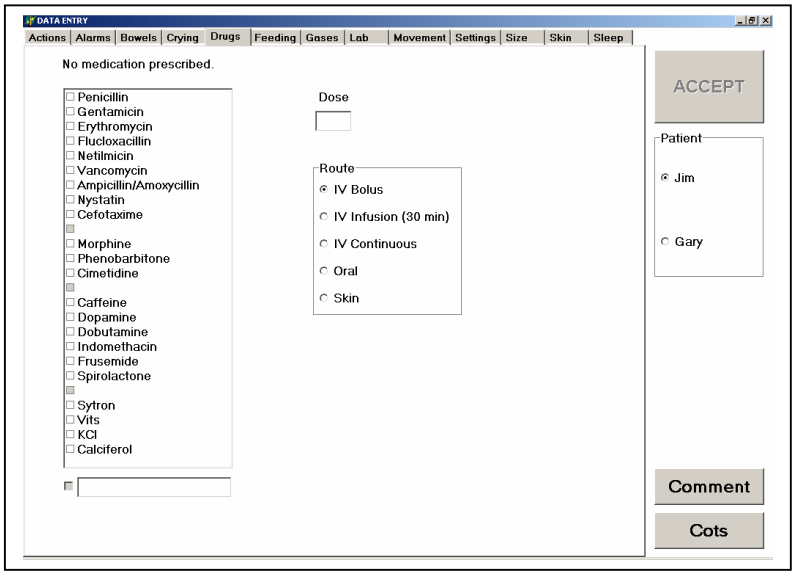
as many limits as you want before clicking on **ACCEPT** which enters them all at once into the database.

This page can be selected to update the alarm limits at any time. The page tells you when you last set the limits (in case you forget!)

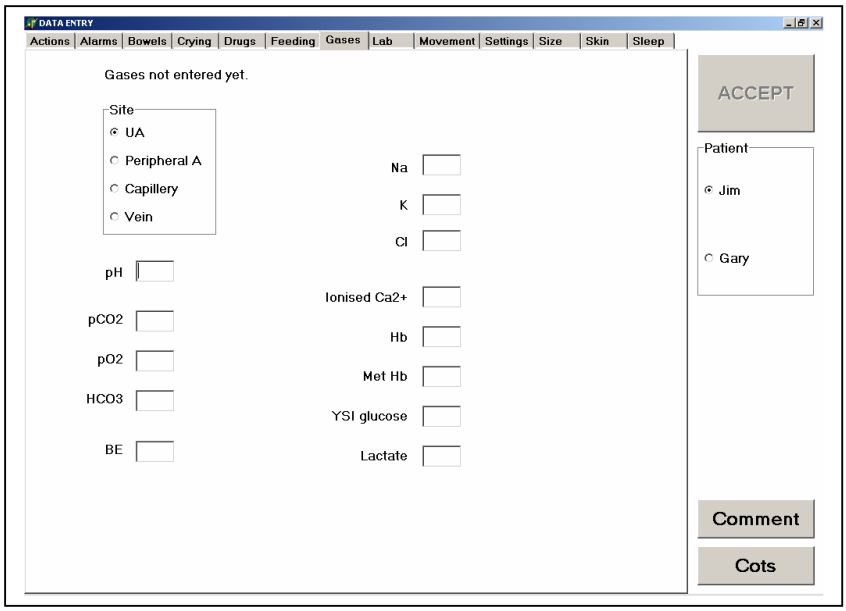
5.7. Drugs

Use this page to enter any **medication** administered. Normally you will be able to select a drug by clicking the box opposite its name. You will be able to select only one drug at a time. If the drug isn't on the list, then click in the box at the bottom and type its name.

Enter the dose by clicking in the dose box and typing a number. Use the **Route** radio box to select a route. When you are ready, click on **ACCEPT**.



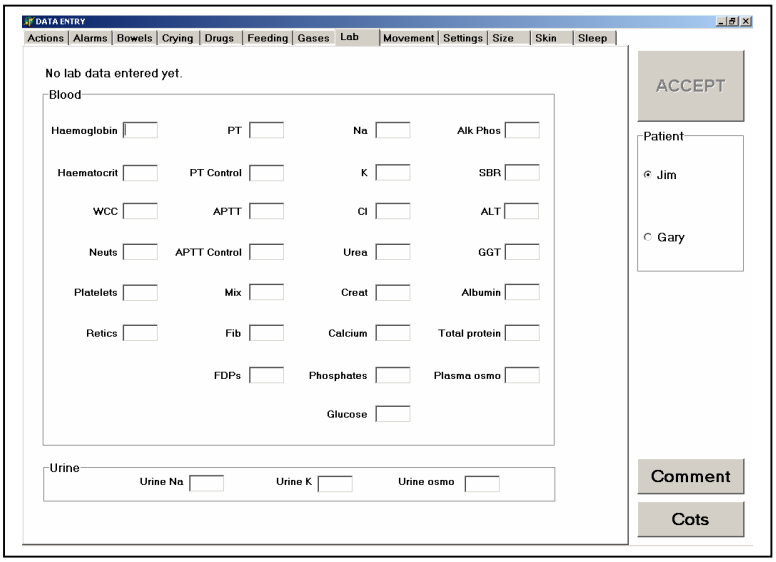
5.8. Gases



Use this page to enter **blood gas results**. Click on the **Site** from which the blood sample was taken. Click on the appropriate box and enter the value. You can enter as many values as you want before clicking on **ACCEPT** to enter them into the database.

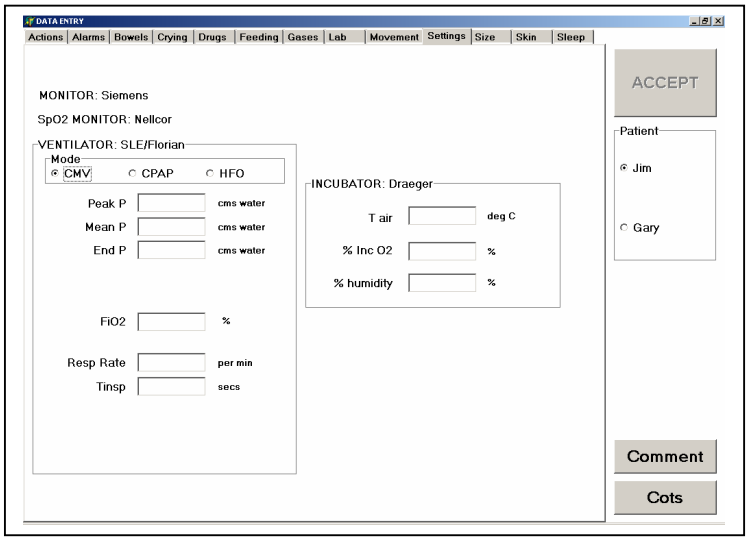
5.9. Lab

Use this page to enter the results of **laboratory tests**. Click on the appropriate box and enter the value. You can enter as many values as you want before clicking on **ACCEPT** to enter them into the database.



5.10. Settings

Use this page to enter the **settings** for the various items of equipment which are in use. You will only be shown the settings for those items that you have previously selected on the Cots form.



In general, as before, you will click on the appropriate box and enter the value. You can enter as many values as you want before clicking on **ACCEPT** to enter them into the database. For the **ventilator**, you will need to select the mode of ventilation. The settings shown will depend on the mode.

6. Structure of Input Files

BabyWatch uses a number of input files to define the actions and observations available to the observer.

6.1. Actions.txt

This is an ASCII file which defines the actions that can be entered. Each action occupies one line. A formatted version of this file is attached. The columns are tab-separated and contain the following data:

- A name for the type of action; these are there for convenience and are not copied into the database (nor are they used by the BabyWatch program). Blank lines are used to separate different types; these are there to improve the readability of the actions screen in the BabyWatch program. However there is a close linkage between the use of blank lines and the layout of the screen so **do not insert or delete any without consulting the program maintainer**.
- The action itself.
- One of the characters **P** or **I**. **P** means that the action is considered to take place at a point in time, **I** that it takes place over an interval (see below).
- One of the characters **M** or **N**. **M** indicates that further attributes are present, **N** that there are none.

6.2. Bowels.txt, Crying.txt, Feeding.txt, Movement.txt, Skin.txt, Sleep.txt, Size.txt

Each of these is an ASCII file which defines the observations that can be made. There is one observation per line. Blank lines are used to enhance the layout of the observations in BabyWatch

7. Database Tables

Each time the observer clicks the ACCEPT button, an entry is generated in one of two database tables. The most common entry is a highly structured record, the **Observation**. From time to time, (s)he will want to enter a free-text **Comment**. In addition, for each day, a record is automatically entered in the **Days** table for each baby.

Tables are written to an Access database file called **Database.mdb** which is located within the main directory containing the BabyWatch software. A good default directory would be **C:\BABYWATCH**. A separate table is generated for those observations which start on a given day. The names of the tables are **Observations_dd_mmm_yy** (e.g. **Observations_11_Oct_01**) where dd_mmm_yy is the day in question. This is not to say that all the data in a table were collected on that day, merely that the observational session started on that day. For example the data from sessions running from at 8am Thursday to 1pm Thursday, and 10pm Thursday to 4am Friday would appear in Thursday's tables. The organisation into separate tables is for convenience and security - each observation or comment has its own separate timing information. Comments are handled similarly in **Comments_dd_mmm_yy**.

7.1. Observations Table

ID

Unique key identifying the record. [AutoNumber - Long Integer - Unique primary key]

PatientID

The string which identifies the baby to the on-ward data collection system [Text - Field Size 20]

ObservationType

The general class of the observation. [Text - Field Size 20] Chosen from the following list of values:

- **Action**: The various actions that be can be taken by nurse, doctor or parent involving the baby. For a complete list, see the file **actions.txt**.
- **Bowels, Crying, Feeding, Movement, Skin, Sleep, Size**: These are all types of observation - complete lists are in **bowels.txt**, **crying.txt**, etc.
- **Observer**: Whether the observer was making observations on the baby in question - the Observation field (see below) will always contain 'Present'.
- **Equipment**: The equipment that was used (i.e. monitor, ventilator, incubator, infant flow, SpO2 monitor, nitric oxide)
- **Alarm limits**: The limits set up for the monitor and the SpO2 monitor.
- **Settings**: The current settings on those pieces of equipment currently in use.
- **Gases**: The results of blood gas analysis
- **Lab results**: the lab results on blood and urine.
- **Medication**: The drugs that are prescribed.

The values available for the remaining fields depend on the ObservationType; see Table 1.

Observation

Details of the actual observation. [Text - Field Size 30]

VValue

A numerical value associated with the observation, if there is one. [Number - Double]

TTime

The date and time of the observation. [Number - Double]

TimeType

Most observations are made at a single *point* in time. However most actions take place over an *interval* of time. In the first case we have a time **Point** coded as **0**. In the latter case the time can either be the time that the interval **Start**s (coded as **1**) or the time that it **Stop**s (**2**). [Number - Long Integer]

Agent

The person making the observation or taking the action. the **Nurse** (coded as **0**), a **Doctor** (**1**), the **Parent** (**2**) or the **Observer** (**3**). [Number - Long Integer]

Attribute

Optional further information - depends on the nature of the observation. [Text - Field Size 30]

Table 1: Detailed Content of Observations Records

For each **ObservationType** we give details of the possible values of each field. The **PatientID** and **TTime** fields will not be described, as they do not vary.

ObservationType	Observation	VValue	TimeType	Agent	Attribute
Observer	Present	Not used	1 (Start) 2(Stop)*)*	3 (Observer)	Null
Action	See the list of actions	Not used	0 (Point) 1 (Start) 2(Stop)	0 (Nurse) 1 (Doctor) 2 (Parent)	See list of possible attributes
Bowels, Crying, Feeding, Movement, Skin, Sleep, Size	See the list of observations.	Not used	0 (Point)	0 (Nurse) 1 (Doctor) 3 (Observer)	Null
Equipment≪	MONITOR	Not used	0 (Point)	3 (Observer)	Siemens HP
	VENTILATOR	Not used	0 (Point)	3 (Observer)	SLE/Florian Babylog
	INCUBATOR	Not used	0 (Point)	3 (Observer)	Draeger Open Cot
	INFANT FLOW	Not used	0 (Point)	3 (Observer)	Yes
	SpO2 MONITOR	Not used	0 (Point)	3 (Observer)	Nellcor Omeda
	NITRIC OXIDE	Not used	0 (Point)	3 (Observer)	Yes

≪ The values for the equipment used (e.g. monitor, ventialator, etc) and their values (e.g. Siemens, HP, etc) are built into the program. It would be simple to modify the possible values (e.g. to add a different type of ventilator) but less easy to alter the types of equipment.

Table 1 (ctd): Detailed Content of Observations Records

ObservationType	Observation	VValue	TimeType	Agent	Attribute
Settings	Mode CMV Mode CPAP Mode HFO	Not used	0 (Point)	3 (Observer)	VENTILATOR: SLE/Florian VENTILATOR: Babylog
	See the list of ventilator settings	The setting	0 (Point)	3 (Observer)	VENTILATOR: SLE/Florian VENTILATOR: Babylog
	See the list of incubator settings	The setting	0 (Point)	3 (Observer)	INCUBATOR: Draeger
	See the list of infant flow settings	The setting	0 (Point)	3 (Observer)	INFANT FLOW
	See the list of SpO2 monitor settings	The setting	0 (Point)	3 (Observer)	SpO2 MONITOR: Nellcor SpO2 MONITOR: Omeda
	See the list of nitric oxide settings	The setting	0 (Point)	3 (Observer)	NITRIC OXIDE
Alarm limits	See the list of alarm limits	The limit	0 (Point)	3 (Observer)	Null
Gases	See the list of results	The result	0 (Point)	3 (Observer)	UA Peripheral A Capillery Vein.
Lab results	See the list of results	The result	0 (Point)	3 (Observer)	Null
Medication	Comma-separated list of drugs; see the list of common drugs available; drugs can also be entered as free text.	The dose	0 (Point)	3 (Observer)	IV Bolus IV Infusion (30 min) IV Continuous Oral Skin

7.2. Comments Table

ID
Unique key identifying the record. [AutoNumber - Long Integer - Unique primary key]

PatientID
The string which identifies the baby to the on-ward data collection system. [Text - Field Size 20]

TTime
The date and time of the comment. [Number - Double]

Comment:
A free text comment of up to 250 characters. [Text - Field Size 250]

7.3. Days Table

[Note that this table has the structure of the 'Intervals' table in the Time Series Workbench].

ID
Unique key identifying the record. [AutoNumber - Long Integer - Unique primary key]

ContextName
The string which identifies the study/project to which this data collection exercise belongs. This will change very rarely, if ever. [Text - Field Size 50]

SourceName
The string which identifies the baby to the on-ward data collection system; the same as the field **PatientID** in the other two tables. [Text - Field Size 50]

ChannelName
Always set to 'None' [Text - Field Size 50]

FullDescriptor
Always set to 'OBSERVER DAYS' [Text - Field Size 50]

VValue
Always set to 'null' [Text - Field Size 250]

StartTimeDays
The integer part of **TTime** i.e. the number of days since the reference day. [Number - Long Integer]

StartTimeTicks
Always set to zero. [Number - Long Integer]

EndTimeDays
Always set to **StartTimeDays** +1. [Number - Long Integer]

EndTimeTicks
Always set to zero. [Number - Long Integer]

CreatedTimeDays
The day that the record was created. Always set to **StartTimeDays**. [Number - Long Integer]

CreatedTimeTicks
The time within the day that the record was created, expressed as 'Ticks' (= 1/10,000 second) since midnight. [Number - Long Integer]

OriginatorType
Always set to 'Observer' [Text - Field Size 50]

OriginatorName
Identifies the person making the observations. [Text - Field Size 50]

ContextDependentData
Null [Text - Field Size 250]

Actions

CARE	CHANGE LINEN	I	N	
CARE	COMFORT	I	M	CALM,STROKE
CARE	CONTAINMENT	I	N	
CARE	CUDDLE/KANGAROO CARE	I	N	
CARE	EYE CARE	I	N	
CARE	INCUBATOR OPEN	I	N	
CARE	MASSAGE	I	N	
CARE	MOUTH CARE	I	N	
CARE	NAPPY CHANGE	I	N	
CARE	SKIN CARE	I	M	NYSTATIN,TOP & TAIL,APPLY OIL
CARE	STIMULATION	I	N	
CARE	TURN/CHANGE POSITION	I	M	SUPINE,PRONE,L-LATERAL,R-LATERAL
CHEST-DRAIN	INSERT CHEST-DRAIN	I	N	
CHEST-DRAIN	MONITOR CHEST-DRAIN	I	N	
CHEST-DRAIN	WITHDRAW CHEST-DRAIN	I	N	
COLLECT DATA	EXAMINE BABY	I	M	AUSCULTATION,ABDOMEN,AXILLA TEMP,TONE,PULSES, FONTANELLE/SUTURES,CAPILLARY RETURN,EARS,EYES,MOUTH,CORD,SKIN, NAPPY AREA,NAILS
COLLECT DATA	OBSERVE BABY	P	M	VISUALLY,MONITOR,BADGER
COLLECT DATA	OPTHALMIC EXAMINATION	I	N	
COLLECT DATA	RE-SITE PROBES	I	M	TCM,SAT O2,HR LEADS,TEMPERATURE,TIME TEST
COLLECT DATA	WEIGH	I	N	
THERAPY	PHOTOTHERAPY	I	N	
THERAPY	PHYSIOTHERAPY	I	M	ACTIVE,PASSIVE
INVESTIGATION	BLOOD (FROM CATHETERS)	I	N	
INVESTIGATION	ECG	I	N	
INVESTIGATION	EEG	I	N	
INVESTIGATION	HEEL PRICK	I	N	
INVESTIGATION	LUMBAR-PUNCTURE	I	N	
INVESTIGATION	SPA	I	N	
INVESTIGATION	SWABS	I	M	SUPERFIC-SKIN,WOUND,EYE
INVESTIGATION	USS	I	M	HEAD,HEART,ABDOMEN
INVESTIGATION	VENEPUNCTURE	I	N	
INVESTIGATION	X-RAY	I	M	CHEST,ABDO,LAT-SHOOT-THROUGH,SKULL,LIMBS

FEEDING	ASPIRATE GASTRIC TUBE	I	N	
FEEDING	ENTERAL FEEDING	I	M	NGT,OGT,ORAL,WINDING
FEEDING	INTRAVENOUS FEEDING	P	N	
FEEDING	INSERT GASTRIC TUBE	I	N	
LINES	BLOOD TRANSFUSION	I	M	RCC,PLATELETS
LINES	CHANGE IV/IA LINES	P	N	
LINES	FLUSH LINES	I	N	
LINES	INSERT LONG LINE	I	N	
LINES	REMOVE LONG LINE	I	N	
LINES	INSERT PERIPH ARTERIAL LINE	I	N	
LINES	REMOVE PERIPH ARTERIAL LINE	I	N	
LINES	INSERT PERIPH VENOUS LINE	I	N	
LINES	REMOVE PERIPH VENOUS LINE	I	N	
LINES	INSERT UAC/UVC LINE	I	N	
LINES	REMOVE UAC/UVC LINE	I	N	
RESPIRATION	ADJUST VENTILATION	P	N	
RESPIRATION	CPAP INITIATE	I	M	ETT,PRONGS
RESPIRATION	CPAP TERMINATE	I	M	ETT,PRONGS
RESPIRATION	EXTUBATE	I	N	
RESPIRATION	GIVE INCUBATOR OXYGEN	I	N	
RESPIRATION	GIVE NITRIC OXIDE INITIATE	I	N	
RESPIRATION	GIVE NITRIC OXIDE TERMINATE	I	N	
RESPIRATION	HAND-BAG BABY	I	N	
RESPIRATION	INTUBATE	I	N	
RESPIRATION	NASAL CANNULA INITIATE	I	N	
RESPIRATION	NASAL CANNULA TERMINATE	I	N	
RESPIRATION	RESUSCITATE	I	N	
RESPIRATION	SUCTION	I	M	ORAL,NASAL,ENDOTRACHEAL
SAFETY	SAFETY CHECKS	P	M	MONITOR LIMITS,FLUIDS,OXYGEN,SUCTION
SAFETY	MUTE ALARM	P	M	MONITOR,VENTILATOR,INCUBATOR,I/V
COMMUNICATION	ROUTINE COMMUNICATION	I	M	NURSE,PARENT,SHO,REGISTRAR,CONSULTANT
COMMUNICATION	URGENT COMMUNICATION	I	M	NURSE,PARENT,SHO,REGISTRAR,CONSULTANT
NO ACTION	NO ACTION	P	M	30 MIN,40 MIN,50 MIN,1 HR,1 HR 20,1 HR 40,2 HR

Bowels

MECONIUM
CHANGING STOOL
SEEDY STOOL
BROWN STOOL
GREEN STOOL
GREY STOOL
PALE STOOL
CLAY (STOOL)
BLOODY STOOL
SOFT STOOL
FORMED STOOL
BREAST MILK STOOL
FATTY STOOL
STRINGY STOOL
MUCOUSY STOOL
FROTHY STOOL
LOOSE STOOL
EXPLOSIVE STOOL
DRY STOOL
LUMPY STOOL
PELLETS (STOOL)
CONSTIPATED
FOUL SMELLING STOOL
NORMAL URINE
GOOD URINE STREAM (BOYS)
DRIBBLING URINE (BOYS)
NOT PASSING URINE
URINE CONCENTRATED
URINE DILUTE
OLIGURIC
SMELLY URINE
STRAW COLOURED URINE
ORANGE URINE
BLOOD STAINED URINE
RED URINE
BROWN URINE
CLOUDY URINE
PROTEINURIA

Crying

APPROPRIATE CRYING
INTERMITTENT CRYING
CONTINUOUS CRYING
VIGOROUS CRY
HIGH-PITCHED CRY
ANGRY CRY
PAINFUL CRY
HOARSE CRY
WEAK CRY
HAPPY
SMILING
RELAXED FACE
WIDE EYED
VACANT
LACK OF FACIAL EXPRESSION
GRIMACE
PUZZLED
ANXIOUS
SAD
STARTLED
AFRAID
TWITCHING
FURROWED BROW
ANGRY FACIAL EXPRESSION
AGITATED

Feeding

TOLERATING FEEDS
MANAGING WELL
WAKING FOR FEEDS
ROUTING FOR FEEDS
ESTABLISHING FEEDS
STRONG SUCK
SOCIAL SUCK
SUCKING POORLY
NO SUCK REFLEX
TUBE FEEDING
VOMITING
BILE-STAINED ASPIRATES

Movement

GOOD TONE
RESPONSIVE
ACTIVE
FLEXED
EXTENDED
WRIGGLY
STRUGGLING
JITTERY
FITS
BACK ARCHING
ASYMMETRICAL MOVEMENT
HYPER-EXTENDED
PULLING KNEES UP
HYPERTONIC
IRRITABLE
HANDLING POORLY
FLOPPY
LETHARGIC
UNRESPONSIVE

Size

NORMAL
GAINING WEIGHT
BIG
FAT
GOOD WEIGHT GAIN
POOR WEIGHT GAIN
LOSING WEIGHT
EXTREMELY LOW BIRTH
WEIGHT
SMALL
SCRAWNY
SYMMETRICAL
ASSYMETRICAL
ABNORMAL
SHORT
SHORT LIMBED
LONG AND THIN
DISPROPORTIONATE SHAPE
DYSMORPIC
MICROCEPHALIC
SQUASHED HEAD
SMALL HEAD
BIG HEAD
FLAT HEAD
SWOLLEN

Skin

PINK
GOOD CAPILLARY REFILL
POOR CAPILLARY REFILL
WASHED OUT
POORLY PERFUSED
PALE
POOR COLOUR
MOTTLED
BLUE
BLACK
BRUISED
RASH
IRRITATED
BLOTCHY
DILATED VEINS
PLETHORIC
JAUNDICED
WAXY
APPEARS SHUTDOWN
DRY
MOIST
CLAMMY
GELATINOUS
SHINY
THIN
TRANSPARENT
FRAGILE SKIN
TAUT
BROKEN
PEELING SKIN
SHABBY
PUFFY
SMOOTH
LOOSE SKIN
DOWNY
HAIRY

Sleep

COMATOSE
SEMI-COMATOSE
DEEP SLEEP
ROUSABLE
ASLEEP
LIGHT SLEEP
SETTLED SLEEP
INTERMITTENT SLEEP
WAKING FOR FEEDS
YAWNING
REMOVING GAZE
SETTLED
QUIET AWAKE
AWAKE
ACTIVE AWAKE
SLEEPLESSNESS
INCONSOLABLE

Alarm limits

Heart Rate MinLimit
Heart Rate MaxLimit
BP MinLimit
BP MaxLimit
PO2 MinLimit
PO2 MaxLimit
TCPO2 MinLimit
TCPO2 MaxLimit
Resp Rate MinLimit
Resp Rate MaxLimit
SpO2 MinLimit
SpO2 MaxLimit

Settings

Ventilator
Mode (CMV, CPAP, HFO)
Peak P
Mean P
End P
CPAP
FiO2
Resp Rate
Tinsp
Frequency
Amplitude

Infant Flow
Flow P
% Flow O2

Incubator
T air
% Inc O2
% humidity

Nitric Oxide
NO Flow
NO
NO2
MetHb

Gases

pH
pCO2
pO2
HCO3
BE
Na
K
Cl
IonisedCa2Plus
Hb
MetHb
YSIGlucose
Lactate

Lab results

Haemoglobin
Haematocrit
WCCLabel
Neuts
Platelets
Retics
PT
PTControl
APTT
APTTControl
Mix
Fib
FDPs
Na
K
Cl
Urea
Creat
Calcium
Phosphates
Glucose
AlkPhos
SBR
ALT
GGT
Albumin
TotalProtein
PlasmaOsmo
UrineNa
UrineK
UrineOsmo

Drugs

Ampicillin/Amoxycillin
Caffeine
Calciferol
Calcium resonium
Cefotaxime
Cimetidine
Curosurf
Dobutamine
Dopamine
Erythromycin
Flucloxacillin
Folic acid
Frusemide
Gentamicin
Glycerine chip
Hypermellose
Indomethacin
KCl
Morphine
Neopain drug
Netilmicin
Normal saline
Nystatin
Pancuronium
Paracetamol
Penicillin
Phenobarbitone
Phosphate
Sodium bicarbonate
Spirolactone
Sytron
Triclofos
Vancomycin
Vecuronium
Vitamin K
Vits